

FIG. 1 (PRIOR ART)

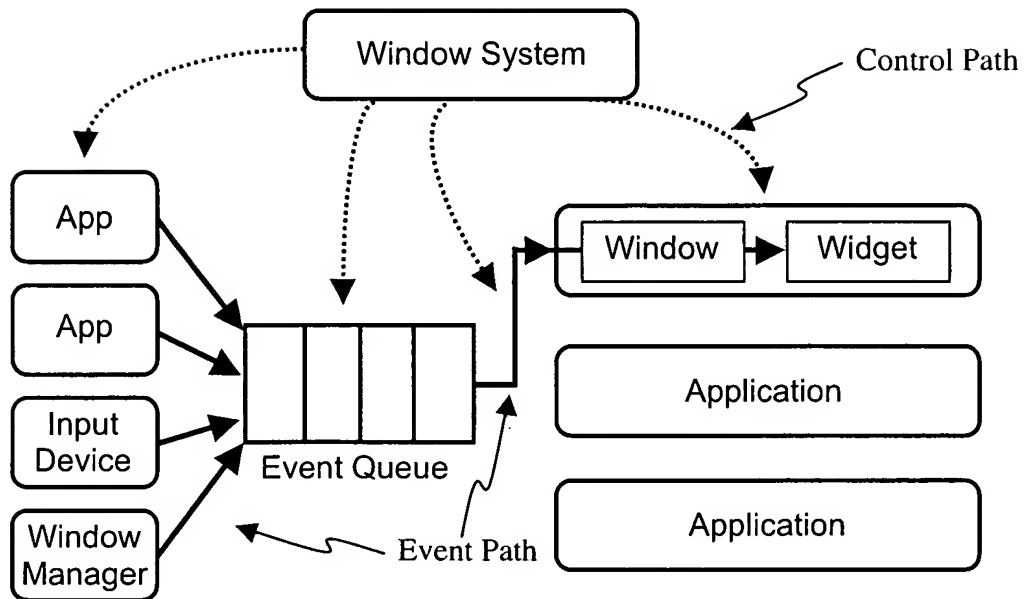


FIG. 2 (PRIOR ART)

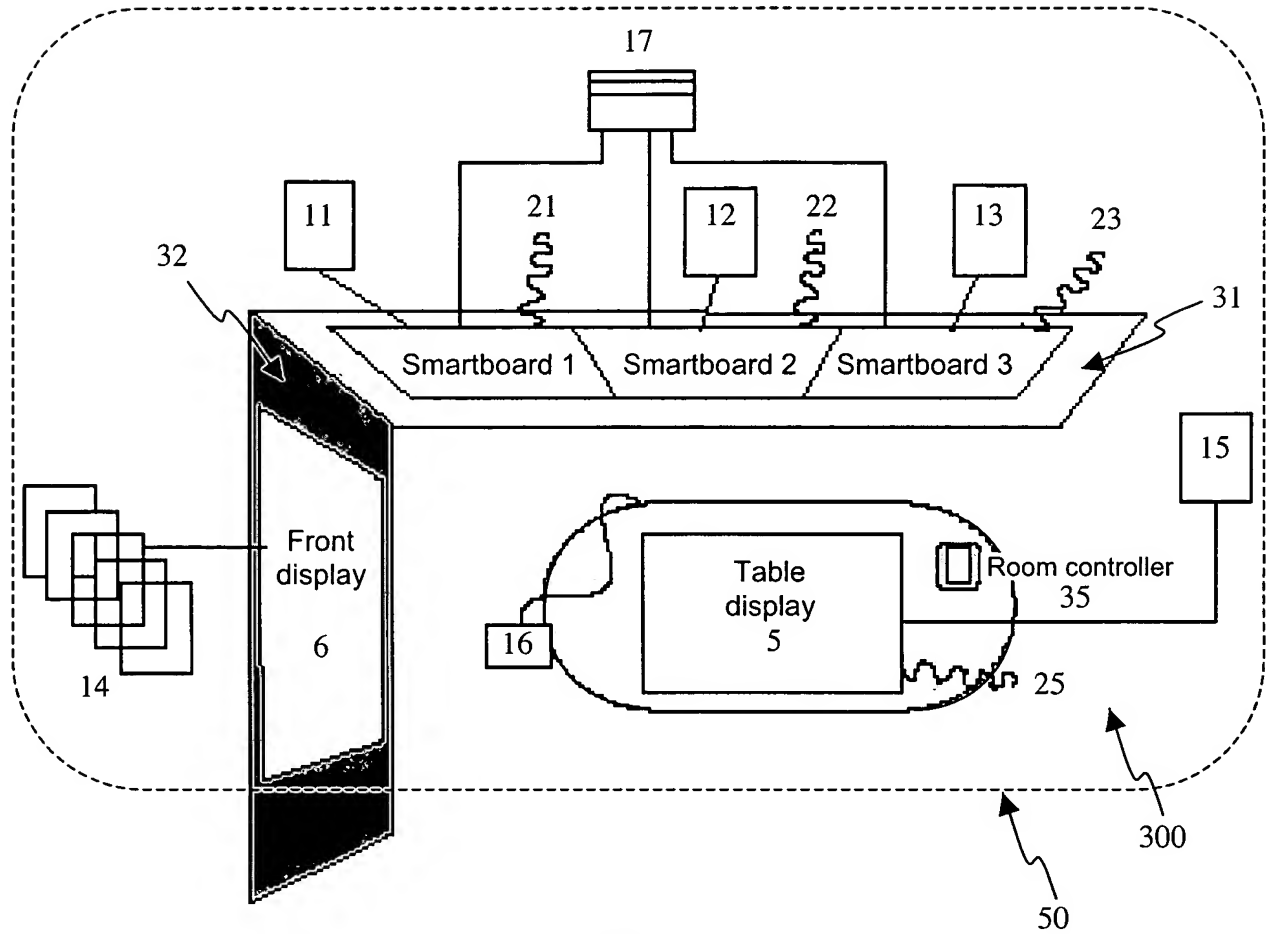


FIG. 3

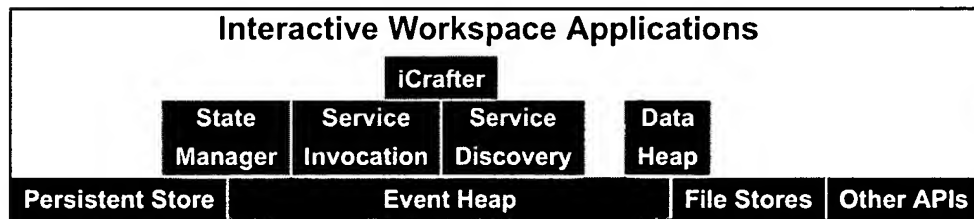


FIG. 4

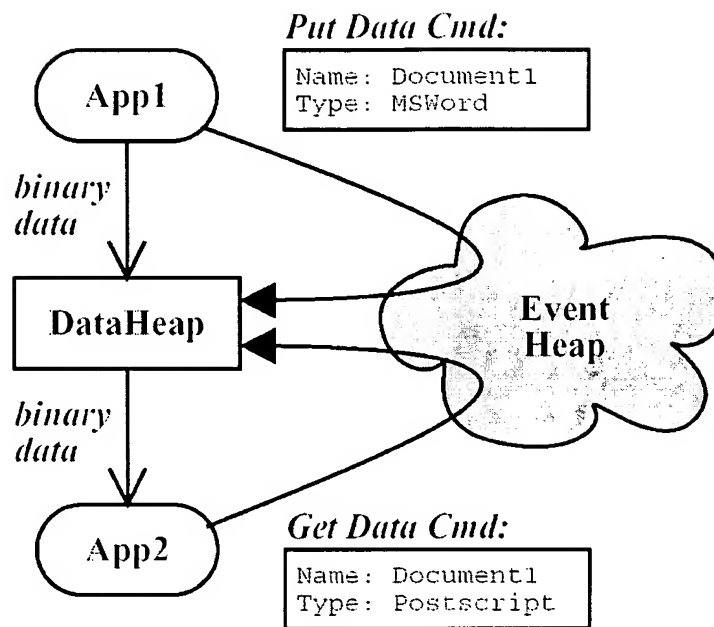


FIG. 5

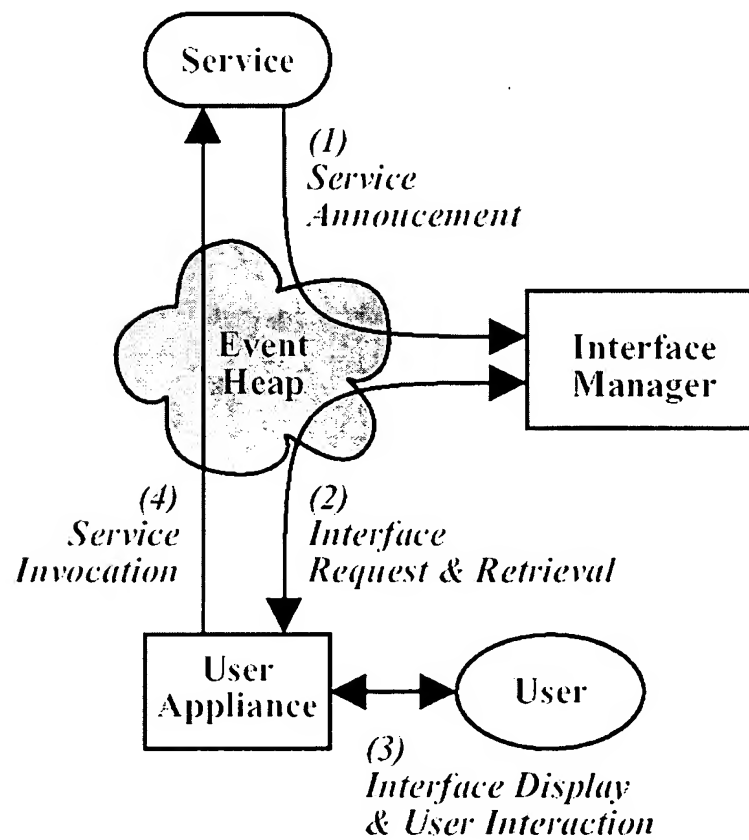


FIG. 6A

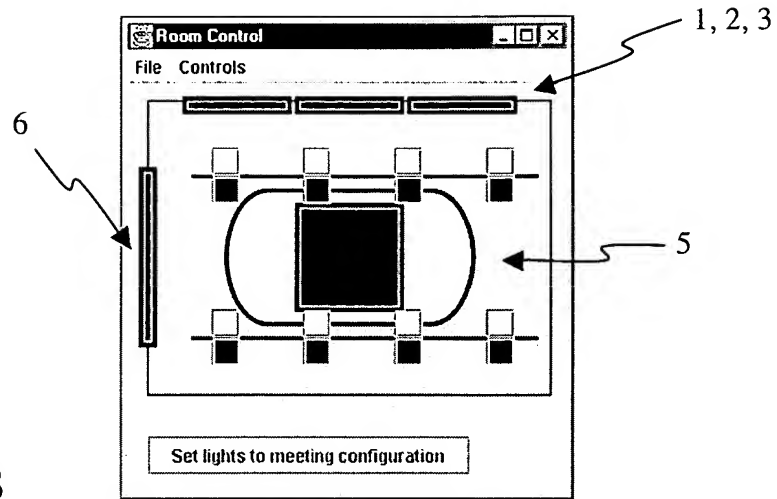


FIG. 6B

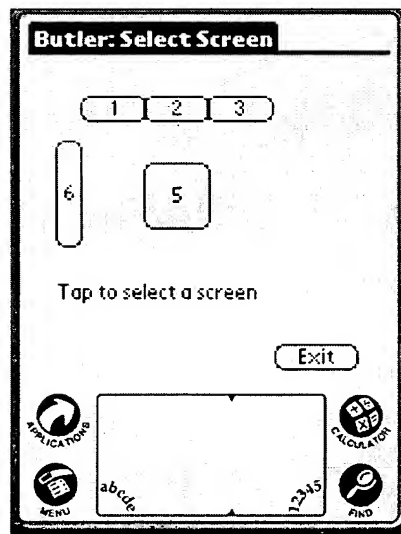


FIG. 6C

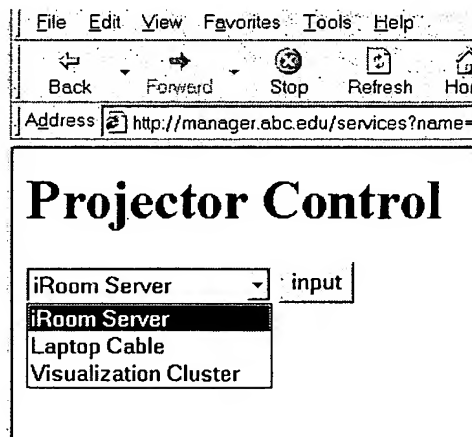


FIG. 6D

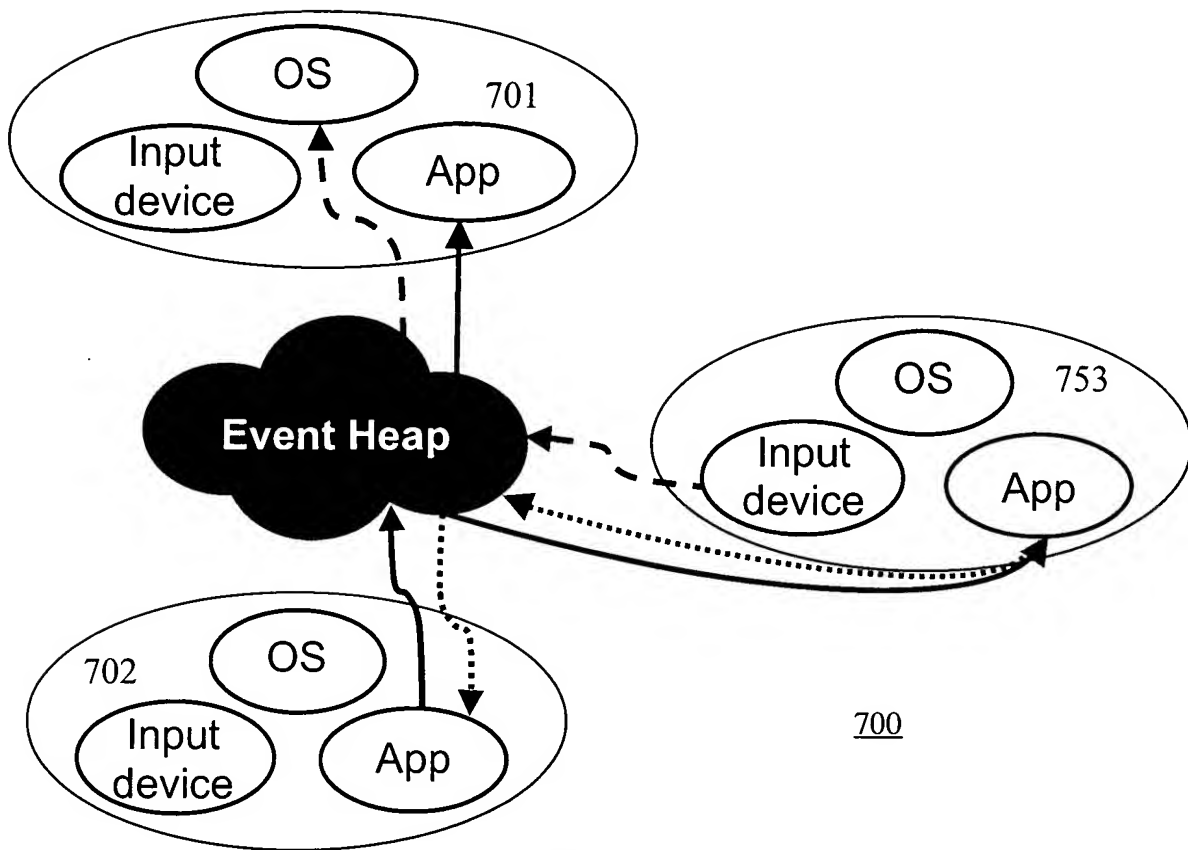


FIG. 7

SELF-DESCRIPTION ONLY

Double xPos	=	Double xPos
Double yPos		Double yPos

FLEXIBLE TYPING AND SELF-DESCRIPTION

EventType MapLoc	≠	EventType GridCoord
Double xPos		Double xPos
Double yPos		Double yPos

(a) Example of False Match Under Basic Tuplespaces that is Fixed by Typing

Double xPos	≠	Double xPos	EventType MapLoc	EventType MapLoc
Double yPos		Double yPos	Double xPos	Double xPos
		Int zoomFactor	Double yPos	Double yPos
				Int zoomFactor

(b) Example of Flexible Typing Allowing Additional Field Data to be Inserted

Double xPos	≠	Double yPos	EventType CameraPos	EventType CameraPos
Double yPos		Double zPos	Double xPos	Double yPos
Double zPos		Double xPos	Double yPos	Double zPos
			Double zPos	Double xPos

(c) Example of Field Ordering Causing Mismatch which is Fixed by Flexible Typing

FIG. 8

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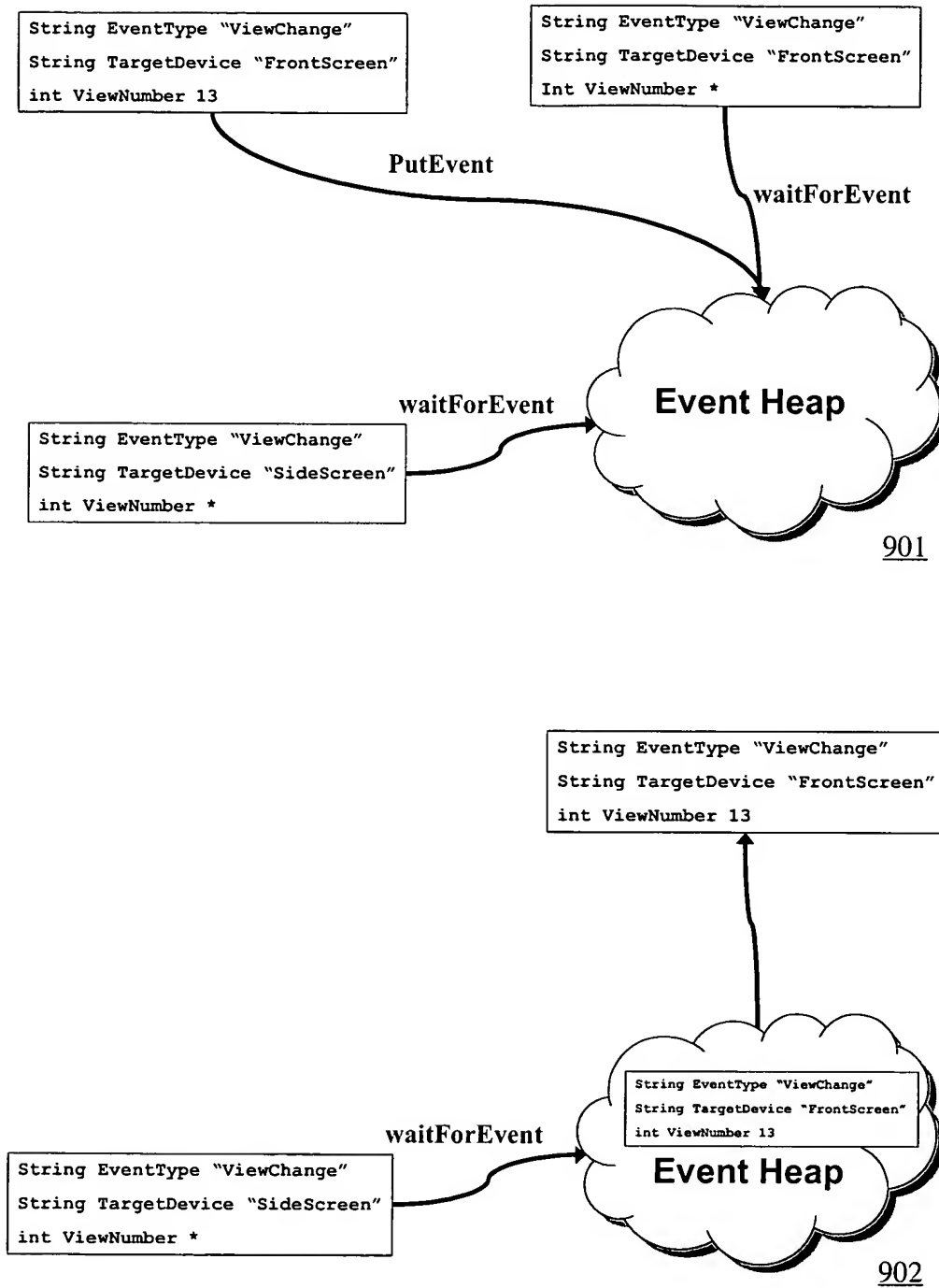


FIG. 9A

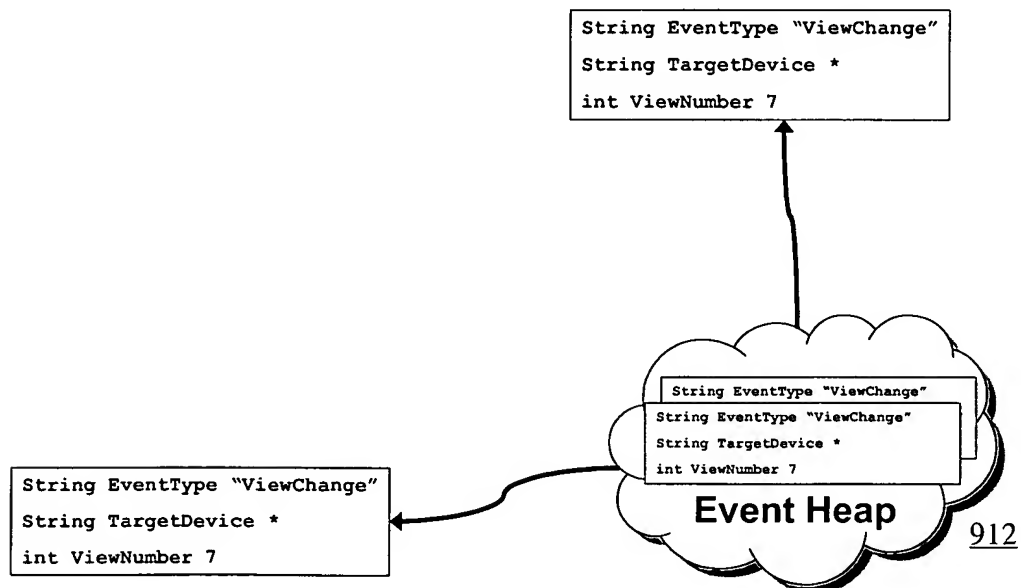
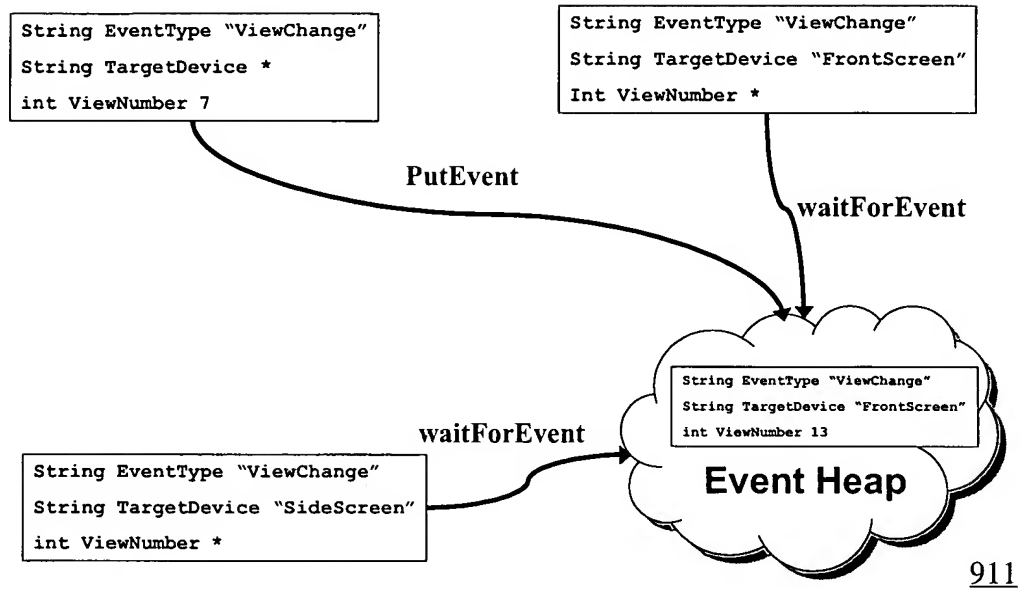


FIG. 9B

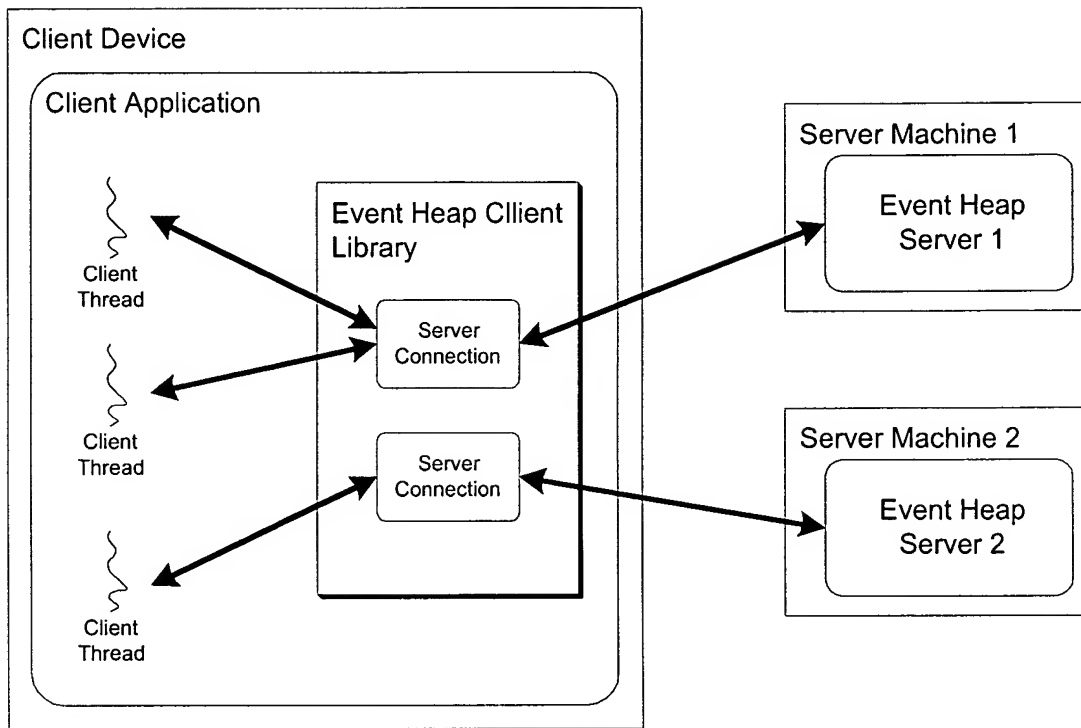


FIG. 10A

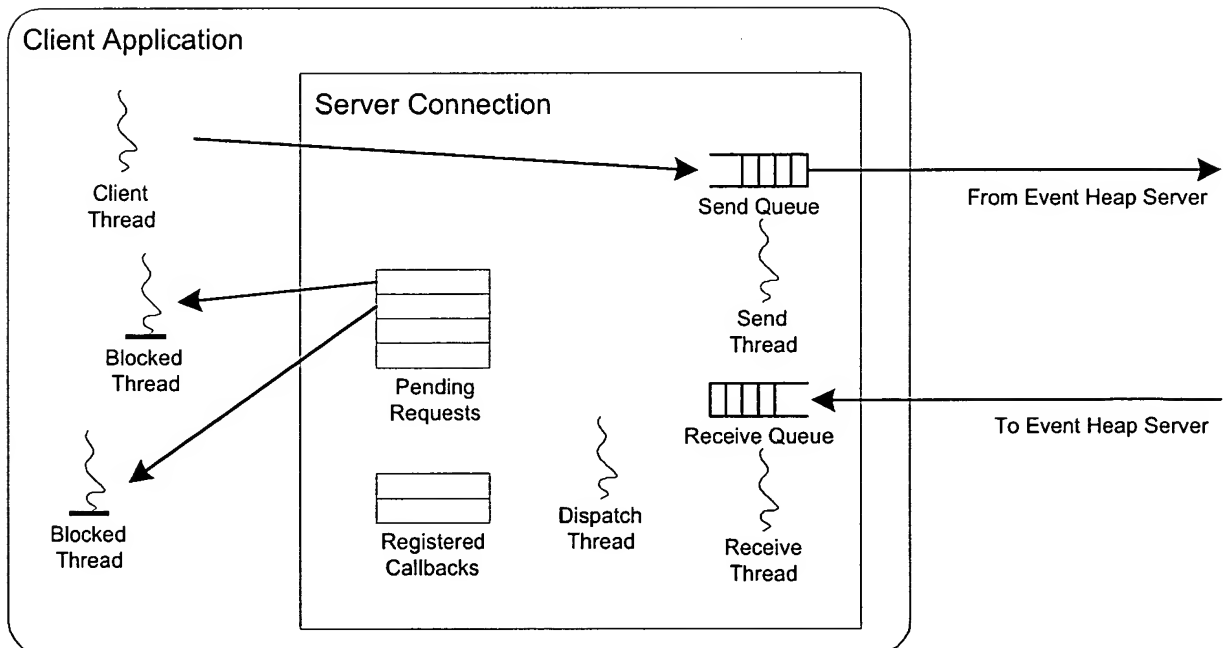


FIG. 10B

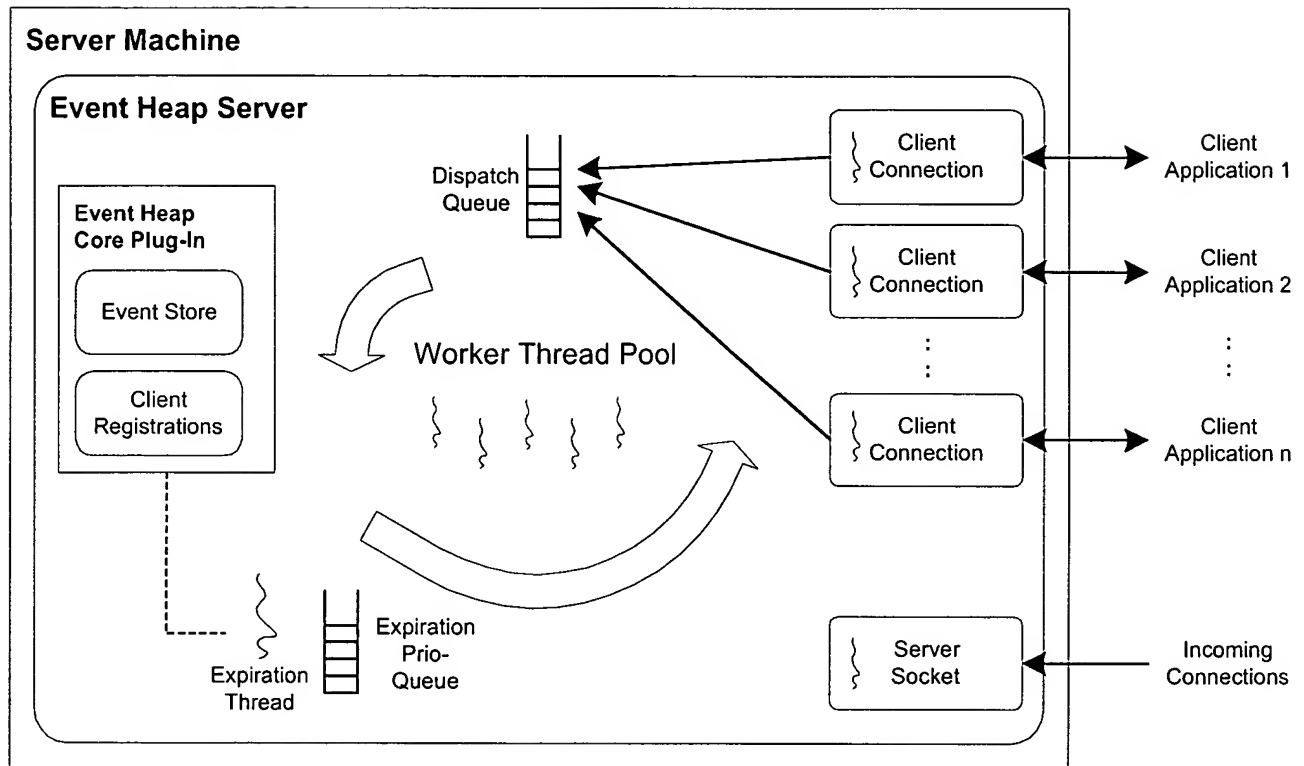


FIG. 11

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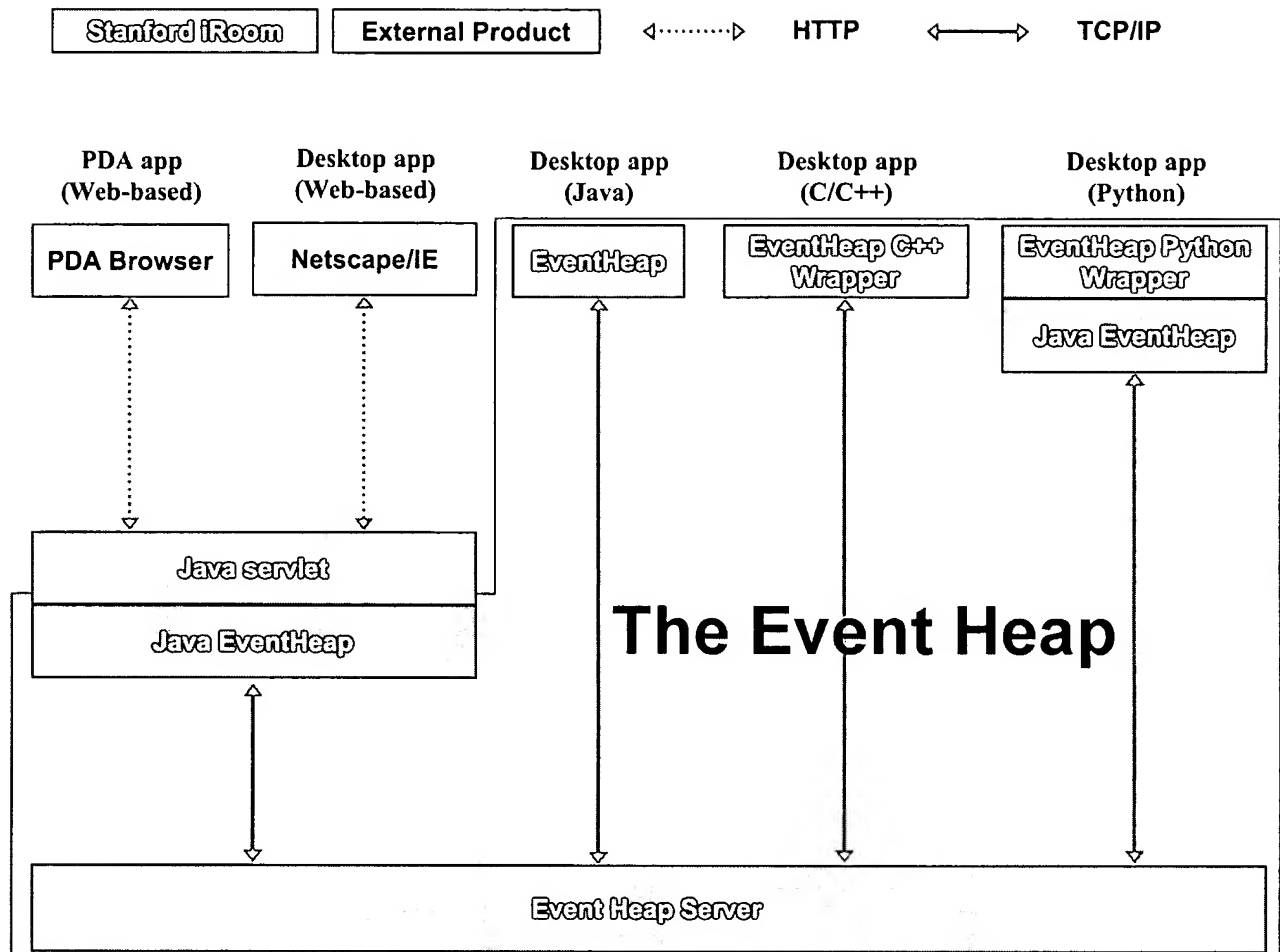


FIG. 12

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Event Heap Debugger

Machine: Port: Source Name: Application Name: Device Name:

Value: Person: Group:

Event	Event Type	Source	Name	NumAccesses	SendTime
putEvent	17	8008_1849474018	(Name: NumAccesses		
getEvent	17	7007_1924388574	(Name: NumAccesses		
removeE...	17	6006_1537084658	(Name: NumAccesses		
waitToRe...	17	5005_2046391882	(Name: NumAccesses		
waitForE...	17	4004_1146667086	(Name: NumAccesses		
snoopEv...	17	3003_2130442438	(Name: NumAccesses		
deleteEv...	17	2002_1547458209	(Name: NumAccesses		
getAll	17	1001_2104118714	(Name: NumAccesses		
clear	TestEvent	1_1855372746	(Name: SendTime		
	TestEvent	1_1855372746	(Name: SendTime		
	TestEvent	0_1044436916	(Name: SendTime		
	TestEvent	0_1044436916	(Name: SendTime		
	TestEvent	1_1855372746	(Name: SendTime		
	TestEvent	0_1044436916	(Name: SendTime		
	TestEvent	0_1044436916	(Name: SendTime		
	TestEvent	1_1855372746	(Name: SendTime		
	TestEvent	1_1855372746	(Name: SendTime		
	TestEvent	0_1044436916	(Name: SendTime		

Field Name: Type:

Machine: localhost Port: -1 Source Name: Default Application Name: EventHeapDebugger Device Name: Default

Connection: Connected to localhost:4535
 getALL: Event(s) retrieved from Event Heap
 getALL call returned no events
 getALL: Event(s) retrieved from Event Heap

FIG. 13

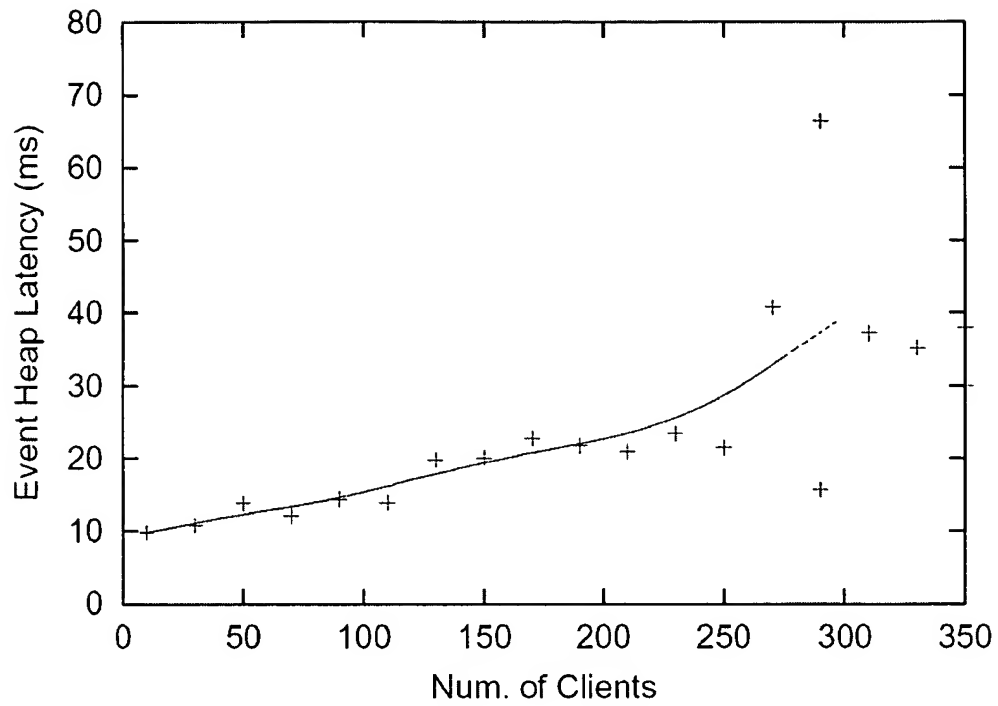


FIG. 14

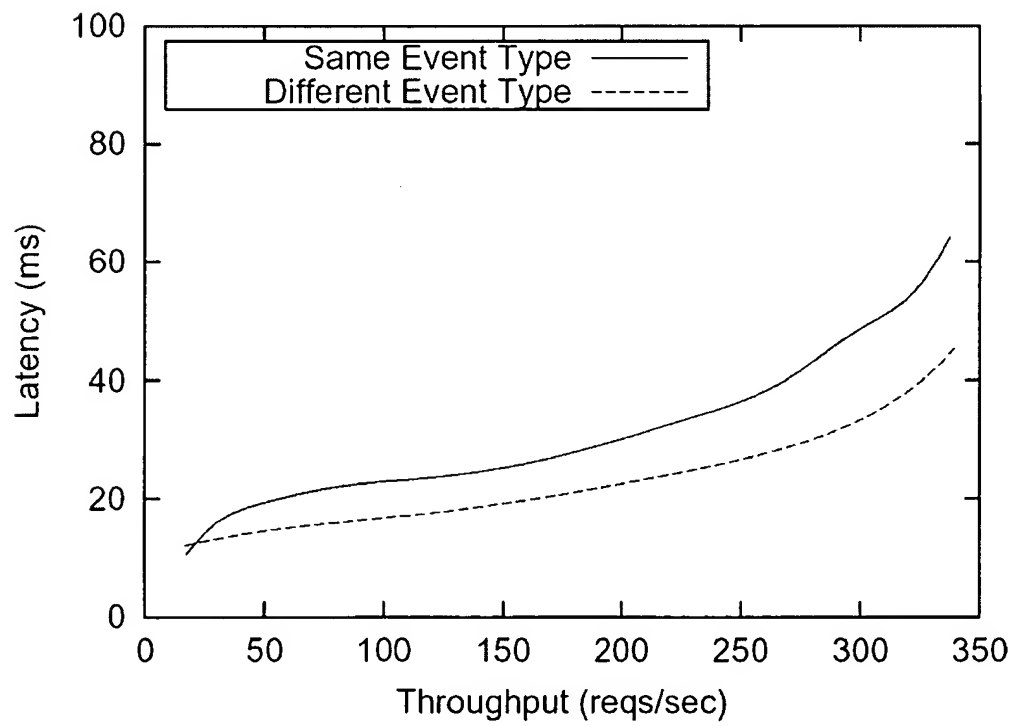


FIG. 15

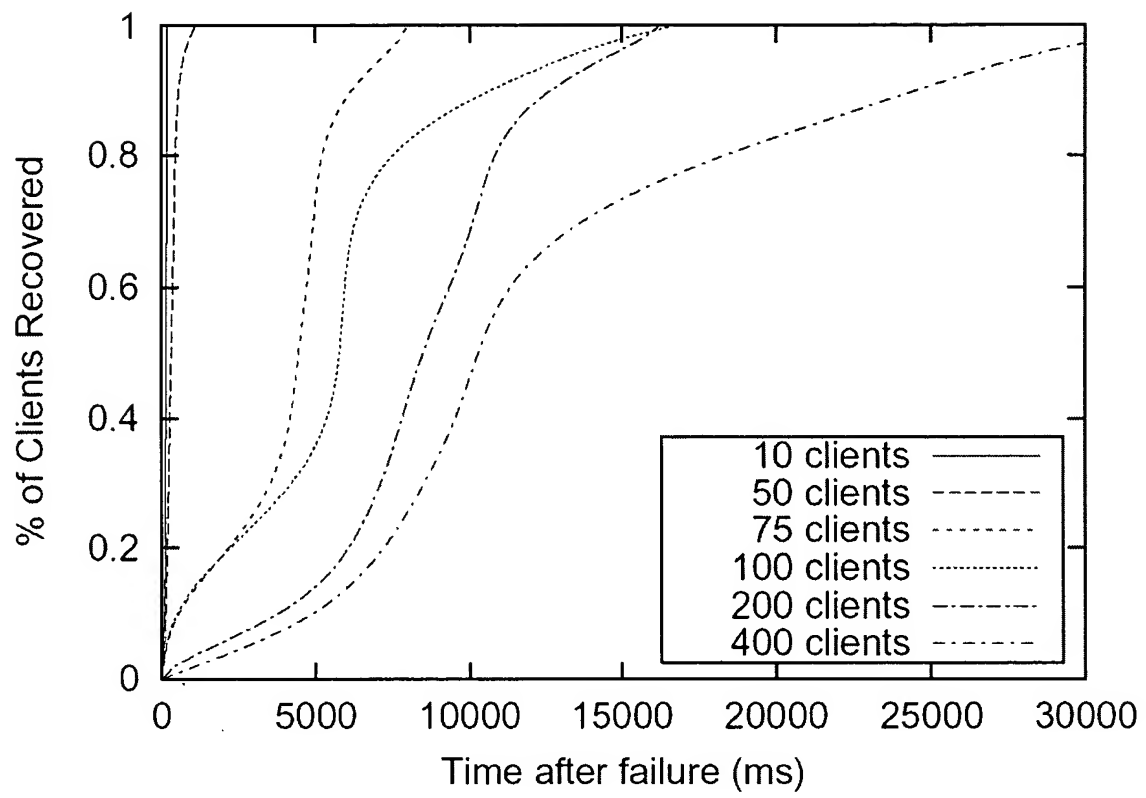


FIG. 16